



Gloucestershire Warwickshire Steam Railway Plc
Risk Assessment for Management of in-track rail defects - Permanent Way

Risk Assessment - Management of in-track rail defects

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Department: Permanent Way

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Management of in-track rail defects

Type	Hazard Cause	Persons Affected	Control Measures	L Overall	S	T	Additional Control Measures	L Overall	S	T	Owner/Action
Health and Safety	Derailment from fractured/broken rail awaiting removal causing injury to passengers or staff or damage to lineside structures Rail defect causes derailment	Everyone	1) CRITICAL - Engineering: Line speed is low - Effective 2) CRITICAL - Engineering: Railway is single line - Effective 3) CRITICAL - Engineering: Passenger rolling stock is fitted with buckeye couplings with restricts sideways movement. - Effective 4) Engineering: One side of a derailed bogie would be restrained by the running rail - Effective 5) CRITICAL - Engineering: Serious defects not allowed to remain within 20 metres of over-line structures. - Effective 6) CRITICAL - Engineering: Defects are clamped by a system of prioritisation - Effective 7) CRITICAL - Engineering: Carriage corners are strengthened to withstand corner impact as a part of the vehicle integrity, - Effective 8) Engineering: Bridge construction would restrain a low speed breach. - Effective 9) CRITICAL - Engineering: Track ballast would substantially reduce wheel rotation - Effective 10) Administrative: Passengers are seated on the train - Effective	2 x Medium - Risk to be minimised and controlled so far as is reasonably practical.	3 =	6	None	2 x Low - Risk to be monitored to ensure it remains adequately controlled to an acceptable level.	2 =	4	n/a



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Type	Hazard Cause	Persons Affected	Control Measures	L Overall	S	T	Additional Control Measures	L Overall	S	T	Owner/Action
Health and Safety	Undetected latent defect Derailment caused by undetected issues	Everyone	1) CRITICAL - Engineering: All of the running line has been subject to non-destructive URFD inspection during 2021 by Sperry which is on the Network Rail approved list of suppliers and undertakes mainline testing using on-track rail flaw monitoring. - Effective 2) CRITICAL - Engineering: Rail has been assessed as free from latent defects unless as reported otherwise. - Effective 3) CRITICAL - Engineering: All running rail will be subject to on-going annual non-destructive URFD in future. - Effective 4) CRITICAL - Engineering: Sperry test sections of rail for detectable latent defects using Network Rail approved testing equipment and processes used internationally. - Effective 5) CRITICAL - Engineering: Testing equipment is subject to QA based inspection and calibration. - Effective 6) CRITICAL - Engineering: NR Cat 5 line maintenance standards are based on a calculated Equivalent Million Gross Tonnes Per Annum (EGMTPA) of 2.5M tonnes. GWSR estimated EGMTPA is 0.28M tonnes. e.g. 10% of Cat 5 line. - Effective 7) CRITICAL - Engineering: Immediate or 7 day defects are clamped and subject to 5/20 mph emergency speed restriction in accordance with the requirements of the GWSR Track Maintenance Manual. - Effective 8) CRITICAL - Administrative: Sperry is an approved supplier under the Railway Industry Supplier Qualification Scheme - RISQS. - Effective 9) CRITICAL - Administrative: Personnel are trained and deemed competent under company CMS. - Effective 10) CRITICAL - Administrative: Sperry SMS and CMS are regularly audited by Network Rail and other major infrastructure organisations in accordance with Supplier Accreditation (RISQS). - Effective 11) CRITICAL - Administrative: Defect categorisation is underpinned and supported by long-term industry experience and scientific research. - Effective 12) CRITICAL - Administrative: Defects detected are graded according to nature and extent of defect based on Network Rail research and ranking protocols. - Effective 13) CRITICAL - Administrative: High risk failure defects are specially identified as immediate or 7 day defects. - Effective	2 x	3 =	6	None	n	n	n	n/a
				Medium - Risk to be minimised and controlled so far as is reasonably practical.							
Health and Safety	Extension of Sperry Action Timescales GWSR doesn't have resources to remediate all issues within required timescales	Everyone	1) CRITICAL - Engineering: Defects detected are graded according to nature and extent of defect based upon NR research and assessment ranking protocols. - Effective 2) CRITICAL - Engineering: NR Cat 5 line maintenance standards are based on an EGMTPA of 2.5M tonnes, GWSR loading is 0.28M tonnes. (10%) - Effective 3) CRITICAL - Engineering: NR assume axle loadings of 25.5 tonnes. GWSR loading is 23.5 tonnes maximum for a loco and 9 tonnes for a carriage.. - Effective 4) CRITICAL - Engineering: High Risk rated defects are removed within the timescales. - Effective 5) CRITICAL - Engineering: Defects are inspected on a regular basis by trained personnel to detect any visible signs of deterioration. e.g. cracks or loss of section. - Effective 6) CRITICAL - Administrative: Risk of failure is assumed to be 25% of NR risk hence remedial action is assumed doubled (increased by a factor of 2) based on engineering judgement. - Effective 7) CRITICAL - Administrative: GWSR line speed is low at a maximum of 25mph. - Effective	2 x	3 =	6	None	n	n	n	n/a
				Medium - Risk to be minimised and controlled so far as is reasonably practical.							

COSHH Assessments



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There are no COSHH assessments associated with this risk assessment.

Reference Documents

- Management of in-track rail defects - Original risk assessment document before conversion to GWSR format. Contains all of the logic and justification of the defect time extension processes and controls.

Ends